IMPACT OF PROFITABILITY AND DIVIDEND POLICY ON SHAREHOLDERS' WEALTH IN NIGERIA: A DYNAMIC FIXED EFFECTS APPROACH

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Abstract

In this study, we investigate the impact of profitability and dividend policy on shareholders' wealth in Nigeria focusing on deposit money banks (DMBs), food and beverages companies that are listed on the Nigerian stock exchange (NSE). Shareholders' wealth is measured by market value per share, while profitability and dividend policy are measured by earnings per share and dividend per share respectively. The empirical analysis is based on a panel dataset consisting of 18 listed firms (9 deposit money banks and 9 food and beverages firms) covering the period 2013 to 2018. Both analysis of variance (ANOVA) and the conventional panel data methods are employed for data analysis. We find some remarkable results. First, our results show that industry-specific factors are significant determinants of a firm's dividend policy, profitability and wealth of shareholders. Second, we find that market value per share is persistent and can be predicted based on its one period lagged value. Also, a firm's unobserved fixed effects, which correlate with its dividend policy and other observed factors, play an important role in its shareholders' wealth determination. Finally, consistent with the dividend irrelevance theory, there is evidence that dividend payments have no significant effect on shareholders' wealth as market value per share responds only to changes in profitability levels. These results hold controlling for corporate governance and firm size.

Key words: Dividend policy, shareholders' wealth, profitability, unobserved fixed effects

Introduction

In corporate finance, the question of whether a firm's dividend policy is a significant determinant of its stock market value is still an unresolved issue despite attracting considerable scholarly attention. Miller and Modigliani (1961) started the debate when they argue that dividend policy plays an insignificant role in the firm valuation process. Their dividend irrelevance model contends that capital markets have no frictions such as asymmetric information and transaction costs, hence, firm value or shareholders' wealth depends only on the ability of the firm to generate profit from its investment activities. Dissatisfied with the irrelevance theory due to its bogus assumptions, several authors (for example, Bhattacharya (1979), Gordon (1963), and Lintner (1962)) have developed alternative theories explaining the importance of dividend policy in firm valuation and shareholders' wealth.

Among these alternative theories is the dividend signaling theory (Bhattacharya, 1979), which is closely related to the asymmetric information theory of Akerloff (1970). According to this theory, dividend announcement is among the main strategies used by corporate managers to signal their accountability and transparency in managing the firm's assets in line with the expectations of its shareholders and other stakeholders. In response, investors incorporate dividend information in their risk pricing model; hence, a firm's dividend policy is a significant determinant of its shareholders' wealth.

Empirically, several studies have considered the effect of dividend policy on shareholders' wealth in both developing and developed countries. However, there are mixed empirical findings. While some studies (for example, Dereli and Topak (2018), Odum, Odum, Omeziri and Egbunike (2019) and Ogboghro and Ebere (2021)) reported evidence that is consistent with the irrelevance theory, others found (for example, Miletić (2011), Ansar, Butt and Shah (2015), Farrukh, Irshad, Khakwani, Ishaque and Ansari (2017) and Tiwari and Pal (2020)) that dividend policy has a significant impact on firm value.

This study, therefore, contributes to this debate by investigating the impact of dividend policy and profitability on firm value in Nigeria using conventional panel data methods. The study is distinct in two ways: First, we analyze the impact of industry-specific factors on dividend policy, profitability and firm value comparing deposit money banks with firms in the food and beverages industry using the ANOVA technique. Second, we incorporate the effects of market value persistence and corporate governance structure in the firm valuation model, while estimating the impact of dividend policy and profitability on firm value. To our knowledge, no previous study in this line of research considered these important dimensions of the relationship between dividend policy coupled with profitability and firm value in Nigeria.

The remainder of this study has four sections. The next section contains the review of related literature, section 3 describes the variables, data and empirical strategy, and section 4 contains data analysis and discussion of findings. The study is concluded in section 5.

Literature Review

Theoretical Framework

In this study, we argue that firm value responds to changes in both dividend and profitability announcements, hence our theoretical framework is consistent with the signaling (information content) theory of dividend (Bhattacharya, 1979). This theory, which contradicts the dividend irrelevance argument of Miller and Modigliani (1961), contends that a firm's dividend policy significantly affects its value in the stock market. According to this theory, dividend announcements are used by corporate managers as a value-enhancing strategy to bridge the information gap between them and corporate shareholders. This implies that dividend announcements information value and serve as a means of signaling to investors and other outsiders that the firm is in good financial standing both currently and in the future. Hence, there is a direct positive relationship between dividend payments and firm value.

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Review of Empirical Studies

Empirical Studies in Other Countries

In Croatia, Miletić (2011) analyzes the impact of dividend announcement on stock prices from 2007 to 2009 using the event study approach. The study finds that dividend announcements have a significant information value for investors who incorporate them in their market valuation and risk pricing model.

In Pakistan, Ansar, Butt and Shah (2015) investigate the effect of dividend policy and profitability on shareholders' wealth for a sample of 30 listed companies from 2007 to 2011. The results obtained from empirical analysis show that dividend per share, retained earnings, return on equity and lagged market value per share all

have positive and significant effects on shareholders' wealth.

Mehdi, Sahut and Teulon (2017) employ the panel GMM fixed effects to investigate the impacts of both governance and ownership structure on a firm's dividend policy. Using a sample of 362 listed firms in 8 (Indonesia, Malaysia, Taiwan) and GCC (Bahrain, Kuwait, Oman and Saudi Arabia) countries. The results obtained from the analysis show that a policy is significantly firm's dividend determined by both board characteristics and ownership structure. Their results also indicate that higher proportion institutional ownership is associated with higher payout ratios.

In Qatar, Banerjee (2018) employs the multiple regression method to examine the impact of dividend policy on firm value for 30 listed companies in the Qatar stock exchange. The sample covers from 2013 to 2017, with a total firm-year panel observation of 180. The results show that both dividend per share and dividend yield have a positive relationship with share prices and profitability. However, while the effects of dividend per share on earnings per share are highly significant, the effect of dividend yield is not significant.

In Turkey, Dereli and Topak (2018) use a balanced panel data for 102 listed companies to investigate the effect of dividend policy on firm market value from 2004 to 2016. They find that both gross dividend payout ratio and cash dividend payout ratio (and their one period lagged values) have no significant effect on stock market performance of the selected firms.

Tiwari and Pal (2020) employ the survey design to examine the impact of dividend policy on stock prices in Indonesia using the cross-sectional regression approach. Data used were collected primarily from 35 listed

companies in Indonesia through a structured questionnaire. They find that higher dividend payout ratio is associated with higher share prices.

In Pakistan, Farrukh, Irshad, Khakwani, Ishaque and Ansari (2017) consider the effects of dividend decision on firm profitability and shareholders' wealth within the panel data framework using the common constant model. Their sample comprises 510 firm-date observations on 51 firms from 2006 to 2015. They find that dividend policy, measured by dividend yield and dividend per share, has a positive and significant effect on firm profitability and shareholders' wealth.

Recent Empirical Studies in Nigeria

Oyinlola and Ajeigbe (2014) examine the impact of dividend policy on stock market valuation of quoted firms in Nigeria using the multiple regression and Granger causality tests. The data used consist of 110 annual panel observations on 22 selected companies across different industries from 2009 to 2013. They find that both dividend payout and retained profits are important explanatory factors for share price determination in Nigeria.

Arko, Abor, Adjasi and Amidu (2014) investigate the factors that determine the dividend decision of firm, focusing on listed companies in Nigeria and three other SSA countries (Ghana, Kenya and South Africa). The sample includes 280 companies, covering the period from 1997 to 2006. They find that profitability, investment opportunities and institutional shareholding are among the main determinants of a firm's dividend policy.

Kajola, Adewumi and Oworu (2015) adopts the panel data framework to examine the relationship between dividend policy and firm profitability in Nigeria. Their sample

includes 25 listed non-financial firms from 2004 to 2013. They find that controlling for leverage, size, and tangibility, dividend policy, measured by payout ratio, has a weakly significant positive relationship with firm profitability, measured by return on assets.

Egbeonu, Edori and Edori (2016) examine the effect of dividend policy on shareholders' wealth in Nigeria using the several econometric frameworks. Their sample comprises 12 listed firms in the banking, manufacturing and oil and gas industries. Although, both dividend per share and earnings per share are found to be significantly related to market value per share, there is no evidence that changes in dividend payments and profitability level have a causal impact on the shareholders' wealth.

Agilebu (2019) employs the panel data framework to test the effect of dividend policy on economic value added in Nigeria focusing on listed manufacturing firms. The study also examines the performance of the three conventional panel data approaches: pooled regression, fixed effect and random effect methods. The empirical analysis of the study is based on data collected from 15 manufacturing companies from 2008 to 2017. They find that the fixed effects outperforms the method other two conventional methods, hence unobserved firm-specific effects significant are determinants of economic value added. They also find that dividend per share, payout ratio and retention ratio all have a positive impact on economic value added, while the impact of dividend yield is negative.

Odum, Odum, Omeziri and Egbunike (2019) examine the impact of dividend policy on the market value of a firm in Nigeria using

Table 1: Sampled Companies

the conventional panel data methods. The sample includes 11 listed food and beverages companies and spans from 2007 to 2016. First, comparing the three conventional panel data methods shows that the fixed effect method outperforms both the pooled regression and random effect methods. Consistent with the Miller and Modigliani's (1961) dividend irrelevance theory, they find that dividend payout ratio has no significant effect on firm value, measured by Tobin Q, while the effects of profitability and leverage ratios on firm value are statistically significant.

Ogboghro and Ebere (2021) employ the dynamic panel GMM framework to examine the effects of dividend policy on price-earnings ratio focusing on listed non-financial firms in Nigeria and Ghana. The empirical analysis is based on a sample of 27 firms (21 Nigerian firms and 6 Ghanaian firms) while the study covers the period from 2008 to 2017. They find that changes in dividend per share and dividend yield have no significant impact on firm valuation.

Methodology Data and Variables

We use unbalanced panel data consisting of 18 listed firms (9 deposit money banks and 9 food and beverages companies) in Nigeria observed from 2013 to 2019. Data were collected from two sources: namely, www.cashcrat.com and the annual reports of the individual firms. All analysis is done in EViews 2011.

While the selected companies are shown in Table 1, the study variables are defined in Table 2. Table 3 shows the industry-level and pooled descriptive statistics. Figures 1 – 6 show the graphical plots for the main study variables.

INDUSRTY	FIRM
BANKING	ACCESS BANK
	FCMB
	FIDELITY BANK
	FIRST BANK
	GTB
	STANBIC IBTC
	STERLING BANK
	UBA
	ZENITH
FOOD AND BEVERAGES	CADBURY
	DANGOTE SUGAR
	GUINESS
	FLOUR MILLS
	NASCON
	NESLE
	NIGERIAN BREWERIES
	PZ
	UNILEVER

Table 2: Variables and their expected signs

Variable	Proxy	Definition	Expected Sign
Dependent Variable			
Shareholders' Wealth	Market Per Share (MVS)	Stock market price of each ordinary share	
Explanatory Variables			
Dividend Policy	Dividend Per Share (DPS)	Total Dividend payment divided by total number of shares outstanding	+
Profitability	Earnings Per Share (EPS)	Profit for the year divided by total number of shares outstanding	+
Control Variables			
Corporate Governance	Board Size (BSIZE)	Total number of executive and non- executive directors	+/-
Firm Size	Log of Total Assets (LASSETS)	Natural Logarithm of Total Assets	+

Table 3 shows the descriptive statistics for

SERIES	BANKING			FOOD & BEVERAGES			POOLED			
	\bar{x}	σ	S	K	\bar{x}	σ	S	K	\bar{x}	σ
MVS	11. 89	12.04	1.25	3.70	178.97	379.71	2.67	8.84	95.43	280.3 8
DPS	0.8	0.88	1.07	2.88	5.36	12.76	3.61	16.39	3.09	9.29
EPS	2.3	1.97	1.03	3.14	5.74	12.04	3.12	12.06	4.02	8.76
BSIZE	12. 87	2.90	0.11	2.47	10.22	2.45	0.39	2.24	11.54	2.99
TA (N 'milli on)	27 70 42 6	1743364	0.66	2.31	151346.9	125912.1	0.99	2.83	146088 7	1801 105

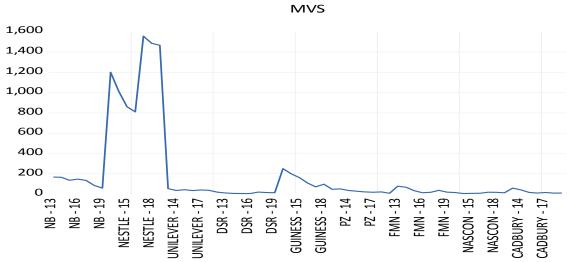


Figure 1: Market Value per share for Food and Beverages Companies

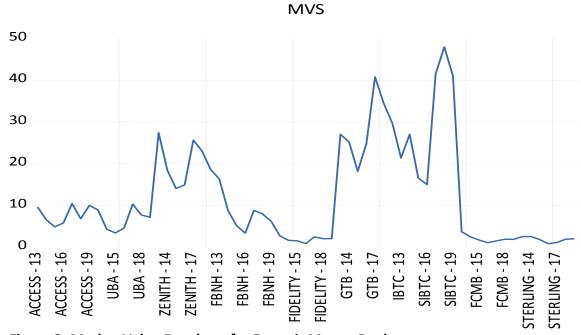


Figure 2: Market Value Per share for Deposit Money Banks

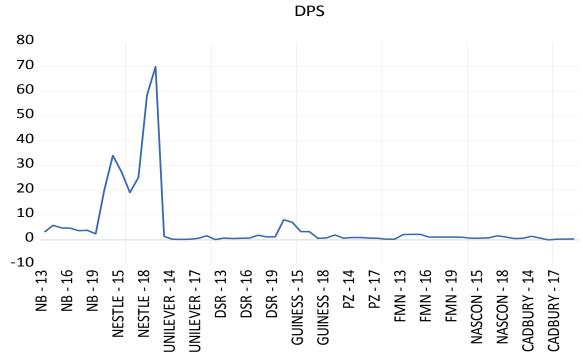


Figure 3: Dividend per share for Food and Beverages Companies

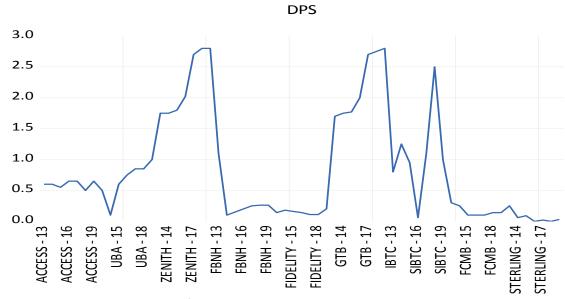


Figure 4: Dividend Per share for Deposit Money Banks

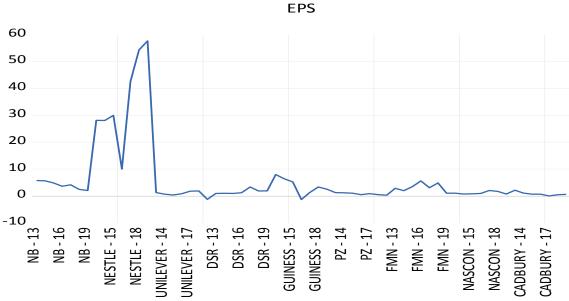


Figure 5: Earnings per Share for Food and Beverages Companies

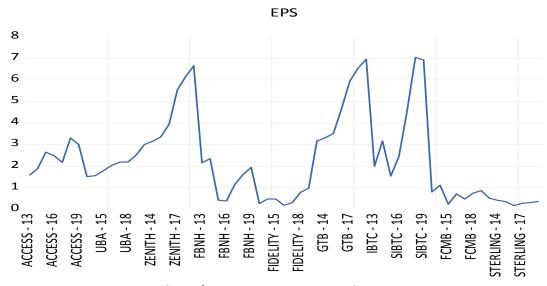


Figure 6: Earnings per Share for Deposit Money Banks

Empirical Strategy

Our empirical model (in logarithmic form) for the effects of dividend policy and profitability on shareholders' wealth is given as follows:

 $LMVS_{it} = \beta_0 + F_i + \beta_1 LMVS_{it-1} + \beta_2 LDPS_{it} + \beta_3 LEPS_{it} + \beta_4 LBSIZE_{it} + \beta_5 LASSETS_{it} + \epsilon_{it}$ (1)

Where

L = natural logarithm, eta_0 = regression constant, F_i = unobserved firm

specific effects, β_1 = the price persistence coefficient, which captures the effect of lagged market value per share, β_2 and β_3 are the slope coefficients capturing the effects of dividend per share and earnings per share respectively, and β_4 and β_5 are the slope coefficients capturing the effects of board size and firm size respectively. ϵ_{it} = error term.

To estimate the above models, we employ the pooled regression and the fixed effect estimation methods. While the pooled regression method ignores F_i by assuming that it does not play any significant role in the model, the fixed effects method attaches importance to F_i by assuming that it correlates with the betas. The problem is: which of these assumptions is consistent with our data. To choose the most appropriate method for our data, we follow

the usual practice by estimating the two methods using the Likelihood ratio test. A significant of this test is evidence against the pooled regression assumption.

Empirical Analysis Analysis of Variance (ANOVA)

Table 4 shows the simple ANOVA (t-test) results for the test of industry effect on dividend policy, profitability and firm value.

Table 4: ANOVA (t-test) results

Variable	t-test statistic	p-value
LDPS	-4.2351	0.0000
LEPS	-1.8410	0.0681
LMVS	-8.0762	0.0000

From Table 4, we can see that the ANOVA (t-test) statistic is highly significant for both dividend per share and market value per share, while it is significant at 10% level for earnings per share. This may be interpreted as suggesting that both dividend policy and firm profitability are significantly influenced by industry-specific factors, which also reflects in the market valuation of the individual firms. This evidence, therefore, emphasizes the distinct role of industry factors (e.g., intensity of competition and regulation) in a firm's earnings and dividend management, and in its market value determination. Hence, the observed differences in market value per share, dividend per share and earnings per share across the individual firms are partly explained by industry-specific factors.

Effects of Dividend Policy and Profitability

Table 5 shows the regression results for the effects of dividend policy and

profitability on firm value. Column A shows the pooled regression results, while Column B shows the fixed effect regression results.

As expected, the Likelihood ratio test is highly significant, hence strongly rejecting the pooled regression assumption that unobserved firm-specific effects are not significant determinants of firm value. This shows that our dynamic panel model is heterogenous and this heterogeneity is largely caused by unobserved firm-specific effects that are correlated with dividend profitability, policy, and corporate governance of the individual firms. Hence, the observed differences in market value per share across the individual firms are partly explained by both industry fixed effects and firm-specific fixed effects. This finding is consistent with Agilebu (2019) and Odum, Odum, Omeziri and Egbunike (2019).

Table 5: Pooled and Fixed Effect Regression Results

Variable	A	В
	Pooled Regression	Fixed Effect
Constant	1.6948	-0.4508
	(0.0001)	(0.8376)

LMVS(-1)	0.7347	0.2745
	(0.000)	(0.0008)
LDPS	0.0363	0.1338
	(0.6239)	(0.1501)
LEPS	0.3110	0.2783
	(0.000)	(0.0083)
LBSIZE	-0.0597	-0.0144
	(0.6979)	(0.9728)
LASSETS	-0.0794	0.1805
	(0.0004)	(0.2530)
R^2	0.9513	0.9720
$ar{R}^2$	0.9488	0.9641
F-statistic	371.71	123.15
	(0.000)	(0.0000)
Likelihood Ratio Statistic	_	55.813
		(0.0000)

From the fixed effect regression results in Column B of Table 5, we can see that the persistence coefficient (β_1 = 0.2745, p-value = 0.0008) is positive and highly significant, indicating that market value per share depends on its one period lagged value. A 1% increase in market value per share in the current period would, on average, increase the next period market value per share by approximately 0.27%, holding other factors constant. This shows evidence that market value per share is persistent, hence, investors in both the banking and food and beverages industries incorporate the previous price information in their current market valuation model. This finding agrees with the findings by Ansar, Butt and Shah (2015) that shareholders' wealth depends on lagged market value per share.

The regression coefficients for LDPS ($\beta_2=0.1338, p$ -value = 0.1501) and LEPS ($\beta_3=0.2783, p$ -value = 0.0083) are both positively signed, which is what we expected since increase in both dividend payment and profitability leads to higher firm value as predicted by signaling theory. The economic interpretation of the estimated coefficients is that *ceteris paribus*, market value per share would, on average, increase by

approximately 0.14% when dividend per increased by 1%, and approximately 0.29% following a 1% increase in earnings per share. This implies that investors in both the banking sector and the consumer goods sector react more to changes in profitability than changes in dividend payment of a firm. However, as indicated by the associated p-values, while the coefficient on dividend per share is not statistically different from zero, coefficient on earnings per share statistically significant. Hence, statistically, there is no evidence that dividend policy of a firm plays an important role in its market value determination. This evidence is, therefore, consistent with the Miller and Modigliani's (1963) irrelevance theory, which contends that a firm's market value depends only on its ability to earn profit from its investment activities, and not on its dividend policy. This finding is consistent with Dereli and Topak (2018), Odum, Odum, Omeziri and Egbunike (2019), and Ogboghro and Ebere (2021), while it is not consistent with Agilebu (2019), Banerjee (2018), Miletić (2011), and Oyinlola and Ajeigbe (2014).

Our fixed effect results also show that the two control variables: LBSIZE $(\beta_4 = -0.0144, p\text{-value} = 0.9728)$ and

LASSETS ($\beta_5 = 0.1805, p$ -value = 0.2530), are not statistically significant in the firm value model, although, they have mixed signs. The negative sign associated with LBSIZE shows that increase in board size tends to be associated with a reduction in firm value. We interpret this potential negative effect in terms of agency costs, which implies the tendency for marginal cost of additional board member arising from potential conflicts and delay in decision making to outweigh its marginal benefits in terms of competence, experience and expertise of the extra director (Eisenberg, Sundgren, & Wells, 1998; Kumar & Singh, 2013; Nguyen & Faff, 2007). On the other hand, the positive sign associated with LASSETS shows that increase in firm size tends to be associated with an increase in firm value. This is consistent with the findings reported by Setiadharma and Machali (2017) that firm size has a positive but insignificant relationship with firm value.

Summary and Conclusions

The aim of this study is to investigate dividend the impact of policy and shareholders' profitability on wealth focusing on listed deposit money banks, food and beverages companies in Nigeria. The study specifies market value per share to depend on dividend per share, earnings per share controlling for board size and firm size. The empirical analysis is based on a sample of 18 listed companies (9 deposit money banks and 9 food and beverages companies) in the Nigerian stock exchange. The period covered spans from 2013 to 2019.

We find that there is a significant difference in both dividend payment and profitability between deposit money banks and firms in the food and beverages industry. Also, both industry-specific and firm specific factors are significant

determinants of shareholders' wealth in Nigeria.

There is evidence that market value per share is persistent and can be predicted based on its one period lagged value. Therefore, historical price information plays an important role in determining firm market value as the relationship between dividend policy and shareholders' wealth follows a dynamic process.

There is evidence that while shareholders' wealth is significantly affected by changes in a firm's profitability, its response to changes in dividend payments, board structure and firm size is not significant. Therefore, our evidence is consistent with the Miller and Modigliani's (1961) irrelevance theory of dividend and suggests that a firm's dividend policy does not matter for investors in both the banking and food and beverages industries in Nigeria.

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